

DOCKET NO.: BTG0004-100 (141183US01)

PATENT

**In the Claims:**

The current status of all claims is listed below and supercedes all previous lists of claims.

Please amend claims 1, 5, 12, 22, and 47 as follows:

1. (currently amended) A method of controlling one or more of plant growth, gene expression, cellular DNA replication, cell cycle progression, differentiation and development in a plant cell comprising increasing or decreasing E2F dimerization partner (DP) protein activity in the plant cell through expression of a recombinant peptide or protein in the plant cell which method comprises transforming the plant cell with a nucleic acid comprising a sequence encoding a peptide or protein with E2F dimerization partner (DP) protein activity in a plant cell, wherein the peptide or protein comprises comprising SEQ ID No. 2, a functional part thereof or a sequence having at least 70% homology to either and wherein the peptide or protein dimerizes with a plant E2F protein or peptide to increase or decrease E2F activity in the plant cell, wherein the E2F activity is E2F binding to E2F binding sites in plant DNA and wherein the peptide or protein comprises at least one of :
  - a) the a DNA binding domain;
  - b) the a heterodimerization domain; and
  - c) the a nuclear localization signal.
2. (previously presented) The method of Claim 1 wherein the peptide or protein sequence is of 50% or more identity with that of the corresponding full length or part of SEQ ID No 2.
3. (previously presented) The method of Claim 1 wherein the peptide or protein sequence is of 70% or more identity with that of the corresponding full length or part of SEQ ID No 2.
4. (cancelled).

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5. (currently amended) The method of Claim 1 wherein transformation of the plant cell with said nucleic acid results in altering the plant DP protein level, modulation of E2F-DP DNA-binding activity, altering E2F-DP transactivation properties, and/or increasing or decreasing the binding of DP to E2F.

6. (previously presented) The method of Claim 1 wherein the DP protein activity is increased or decreased alone and/or in combination with a modification of the levels or activity of plant E2F and/or plant Rb.

7-11. (cancelled).

12. (currently amended) An isolated, enriched, cell free and/or recombinant nucleic acid comprising a sequence encoding a protein or peptide that ~~increases or decreases E2F dimerization partner (DP) activity in a plant cell~~, which peptide comprises one or both DP activities in plants selected from (i) the ability to dimerize dimerization with plant E2F protein and (ii) the ability to modulate modulation of E2F binding to E2F transcription factor binding sites in plant DNA, wherein the protein or peptide comprises SEQ ID No 2 or a functionally active part thereof or a sequence having at least 70% homology to such sequence or part, and wherein the protein or peptide comprises at least one of:

- a) the a DNA binding domain;
- b) the a heterodimerization domain; and
- c) the a nuclear localization signal.

13. (previously presented) The nucleic acid of Claim 12 comprising the coding nucleic acid sequence of SEQ ID No 1 or a part thereof encoding for all or a functional part of the amino acid sequence shown therein.

14. (previously presented) The nucleic acid of Claim 12 wherein the nucleic acid is contained in plasmid pCLON33, deposit number CECT 5195 made on August 17, 1999.

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15. (previously presented) The nucleic acid of Claim 12 wherein the nucleic acid encodes a plant DP or a functional variant thereof and comprises SEQ ID No 1, a sequence complementary to SEQ ID No 1, or a sequence that is antisense to SEQ ID No 1.
16. (previously presented) A nucleic acid probe comprising a DNA sequence which encodes an amino acid sequence selected from the group consisting of SEQ ID No 2, SEQ ID No 4, SEQ ID No 6, and SEQ ID No 8.
17. (previously presented) A nucleic acid probe or primer comprising a double or single stranded DNA sequence comprising 10 or more contiguous nucleotides of SEQ ID No 1 with the proviso that the ten or more contiguous nucleotides are not selected from nucleotides encoding amino acids 70 to 136.
18. (previously presented) An oligonucleotide probe comprising at least 18 contiguous bases of SEQ ID No 1.
19. (previously presented) The oligonucleotide probe of Claim 18 comprising 30 to 100 bases.
20. (previously presented) The oligonucleotide primer of Claim 17 comprising 10 to 20 bases.
21. (previously presented) A DNA which is antisense to a nucleic acid of claim 12.
22. (currently amended) A nucleic acid comprising a DP protein or peptide encoding sequence together with a sequence encoding an E2F protein or peptide, wherein the DP protein or peptide ~~increases or decreases E2F dimerization partner (DP) activity in a plant cell comprising one or both DP activities in plants selected from (i) the ability to dimerize with plant E2F protein and (ii) the ability to modulate E2F binding to E2F transcription factor binding sites~~

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in plant DNA, wherein the DP protein or peptide comprises SEQ ID No 2 or a functionally active part thereof or a sequence having at least 70% homology to such sequence or part, and wherein the protein or peptide comprises at least one of:

- a) the a DNA binding domain;
- b) the a heterodimerization domain; and
- c) the a nuclear localization signal.

23. (previously presented) The nucleic acid of Claim 22 wherein the sequences encoding the DP and E2F are under control of the same regulatory element or elements, wherein the regulatory element is a promoter or promoters.

24. (previously presented) A nucleic acid vector or construct comprising a nucleic acid of Claim 12 or antisense nucleic acid thereto.

25-46. (cancelled).

47. (currently amended) A nucleic acid encoding a DP peptide or protein fused to a sequence encoding a protein label, wherein the DP protein or peptide is ~~increases or decreases E2F-dimerization partner (DP) activity in a plant cell comprising one or both DP activities in plants selected from (i) the dimerization with plant E2F protein and (ii) modulation of E2F binding to E2F transcription factor binding sites in plant DNA or effect thereof, wherein the DP protein or peptide comprises SEQ ID No 2 or a functionally active part thereof or a sequence having at least 70% homology to such sequence or part, and wherein the protein or peptide comprises at least one of:~~

- a) the a DNA binding domain;
- b) the a heterodimerization domain; and
- c) the a nuclear localization signal.